

REMARKS

In the present amendment, claims 1, 2, 3, and 5 have been amended, claim 4 has been canceled, and new claim 10 has been added. Accordingly, claims 1-3 and 5-10 are pending in the application with claim 1 being independent.

Applicants note that claims 1, 2, 3, and 5 have been amended to more specifically define the water-purifying material of the present invention and to clarify language. Support for the amendments can be found throughout the originally filed specification, and, e.g., at page 8, paragraph [0027]. The subject matter of new method claim 10 is supported in the specification, e.g., at page 10, paragraph [0030]. No new matter has been added.

Response to Rejections under 35 U.S.C. § 102(b)

The Office Action rejects claims 1-6 and 8 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent Application Publication No. 2004/0084376 to Matsumura et al., hereinafter "MATSUMURA". The rejection describes MATSUMURA as disclosing a method for the purification of groundwater polluted with nitrate nitrogen by using porous starch-based biodegradable plastic with a starch content of 60 wt% or greater as a carbon source or carrier for denitrifying bacterial. The Rejection further asserts that MATSUMURA teaches that "the starch C/N ration is 6 or greater."

Applicants respectfully disagree with the rejection. There is no indication in the disclosure of MATSUMURA that the carbon source contains nitrogen at a C/N ration of 6 or higher. Moreover, MATSUMURA teaches the use of biodegradable plastic derived from starch, which is without doubt an artificial product made from starch as starting material and cannot be considered as a raw natural material. In contrast, the presently claimed invention requires a

natural raw material comprising a polysaccharide as principal component and nitrogen at a C/N ratio of 6 or more.

Applicants further note that MATSUMURA's immobilizing carrier is described to be used for the denitrification of nitrate nitrogen, i.e., the conversion from nitrate to nitrogen, in waste water treatment systems under aerobic conditions. In contrast, the solid material of the present invention causes nitrification, i.e., the conversion from ammonia nitrogen into nitrate nitrogen under anaerobic conditions. Therefore, the carbon source in MATSUMURA is considered to operate by a different mechanism than the solid material of the present invention: while MATSUMURA destroys nitrate nitrogen, the present invention forms nitrate nitrogen.

Accordingly, MATSUMURA fails to disclose the main elements of the presently claimed invention, and therefore withdrawal of the rejection of claims 1-6 and 8 under 35 U.S.C. § 102(b) is respectfully requested.

The Office Action further rejects claims 1-6 and 8 under 35 U.S.C. § 102(b) as allegedly being anticipated by JP 2000-153293, hereinafter "JP'293". The rejection asserts that JP'293 "discloses making a biodegradable plastic treated with porous media in a tank with poor drainage with a natural polymer such as starch into a fixed bed" and that "the starch C/N ration is 6 or greater."

Applicants respectfully submit that the biodegradable plastic disclosed in JP293 is not a natural raw material, but an artificial product made by converting a natural raw material into a plastic. Furthermore, JP'293 does not give any indication that the solid material also contains nitrogen, and in consequence, JP'293 also does not disclose C/N ratios of the solid material.

Applicants respectfully refer to the only example disclosed in JP'293, paragraph [0051], which teaches the use of a microbiologically produced polyester and does not comprise nitrogen.

For at least the above reasons, JP'293 fails to disclose all the elements of the claims, wherefore withdrawal of the anticipation rejection is respectfully requested.

Response to Rejection under 35 U.S.C. § 103(a)

The Office Action rejects claim 7 under 35 U.S.C. § 103(a) as allegedly being obvious over MATSUMURA or JP'293 in view of JP 11-114593, hereinafter "JP'593".

The Office Action makes the rejection under the assertion that claim 1 of the present invention is anticipated by MATSUMURA and/or JP'293, and concludes it would have been obvious for someone of ordinary skill in the art to use the water-purifying material of claim 1 in a water tank for aquarium fish as described in JP'593.

In response, Applicants respectfully note that MATSUMURA as well as JP'293, at least for the reasons advanced above, do not anticipate claim 1. JP'593 merely teaches the use of an organic carbon source of solid or liquid type that is placed in an oxygen-poor area of a water tank, and does not cure the deficiencies of MATSUMURA and JP'293. Furthermore, also the combination of MATSUMURA or JP'293 with JP'593 would not disclose or suggest the subject matter of claim 7. Accordingly, Applicants respectfully request withdrawal of the obviousness rejection of claim 7.

The Office Action rejects claim 9 under 35 U.S.C. § 103(a) as allegedly being obvious over MATSUMURA, JP'293, JP'593 and JP 2002-273471, hereinafter "JP'471". The rejection asserts that MATSUMURA and JP'293 teach the presently claimed invention as applied in claim

1, and concludes “it would have been obvious to have used the biodegradable plastic described in JP’293 as a carbon source placed in an area of oxygen-deficient water described in JP’593 and JP’471.”

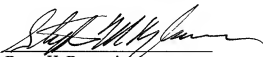
As noted above, MATSUMURA and/or JP’293 do not anticipate claim 1 of the present invention. JP’593 and JP’471 do not cure the deficiency of MATSUMURA and/or JP’293 by merely disclosing that a carbon source should be placed in an area of oxygen-deficient water. Accordingly, the combination of MATSUMURA, JP’293, JP’593 and JP’471 would not disclose or suggest the subject matter of claim 9. Applicants respectfully request withdrawal of this rejection as well.

CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims. Applicant therefore respectfully requests that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

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